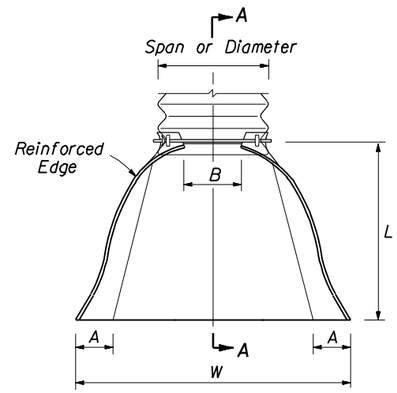
REG	STATE	PROJECT	SHEET NO.

END SECTIONS FOR PIPE ARCH CULVERT

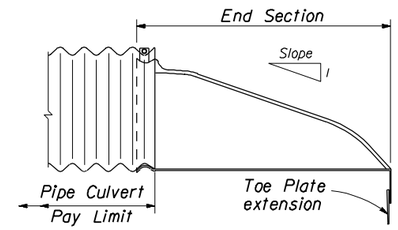
PIPE SIZE	MINIMUM METAL THICKNESS				DIMENSIONS						SLOPE
	STEEL		ALUM.		A	B	H	F	L	W	
SPAN X RISE INCHES	INCH	GAGE	INCH	GAGE	INCHES	INCHES	INCHES	INCHES	INCHES	INCHES	Approx.
17 x 13	.064	16	.060	16	5	9	6	28	20	52	2 1/8
21 x 15	.064	16	.060	16	6	11	6	34	24	58	2
24 x 18	.064	16	.060	16	7	12	6	40	28	63	2 1/8
28 x 20	.064	16	.060	16	7	16	6	46	32	70	2
35 x 24	.079	14	.075	14	9	16	6	58	39	85	1 7/8
42 x 29	.079	14	.075	14	11	18	7	73	46	104	1 7/8
49 x 33	.109	12	.105	12	12	21	9	82	53	117	1 3/4
57 x 38	.109	12	.105	12	16	26	12	88	62	132	1 7/8
53 x 41	.109	12	.105	12	17	26	12	88	63	130	1 3/4
64 x 43	.109	12	.105	12	17	30	12	100	69	144	1 7/8
60 x 46	.109	12	.105	12	17	36	12	100	70	142	1 7/8
71 x 47	.109	12	.105	12	17	36	12	112	77	156	1 7/8
66 x 51	.109	12	.105	12	17	36	12	112	77	156	1 3/4
77 x 52	.109	12	.105	12	17	36	12	124	77	167	1 5/8
73 x 55	.109	12	.105	12	17	36	12	124	77	168	1 1/2
83 x 57	.109	12	.105	12	17	44	12	130	77	177	1 1/2
81 x 59	.109	12	.105	12	17	44	12	136	77	179	1 5/8
87 x 63	.109	12	.105	12	17	44	12	136	77	186	1 1/2
95 x 67	.109	12	.105	12	17	44	12	160	87	210	1 1/2
103 x 71	.109	12	.105	12	17	44	12	172	87	222	1 1/3
112 x 75	.109	12	.105	12	17	44	12	172	87	226	1 1/4

END SECTIONS FOR ROUND PIPE CULVERT

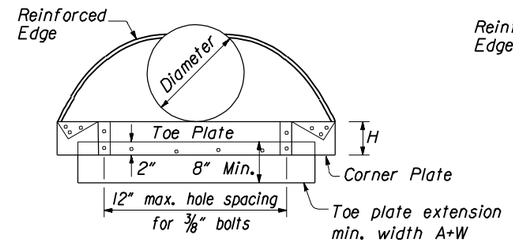
PIPE SIZE	MINIMUM METAL THICKNESS				DIMENSIONS						SLOPE
	STEEL		ALUM.		A	B	H	F	L	W	
DIAMETER INCHES	INCH	GAGE	INCH	GAGE	INCHES	INCHES	INCHES	INCHES	INCHES	INCHES	Approx.
12	.064	16	.060	16	5	7	6	22	21	44	2 1/4
15	.064	16	.060	16	6	8	6	28	26	52	2 1/4
18	.064	16	.060	16	7	10	6	34	31	58	2 1/8
21	.064	16	.060	16	8	12	6	40	36	66	2 1/8
24	.064	16	.060	16	9	13	6	46	41	72	2 1/8
30	.079	14	.075	14	11	16	8	55	51	88	2 1/8
36	.079	14	.075	14	13	19	9	70	60	105	2
42	.109	12	.105	12	15	25	10	82	69	122	2 1/8
48	.109	12	.105	12	17	29	12	88	78	131	2
54	.109	12	.105	12	17	33	12	100	84	143	2
60	.109	12	.105	12	17	36	12	112	87	157	1 7/8
66	.109	12	.105	12	17	39	12	118	87	162	1 5/8
72	.109	12	.105	12	17	44	12	120	87	169	1 1/2
78	.109	12	.105	12	17	48	12	130	87	178	1 3/8
84	.109	12	.105	12	17	52	12	136	87	184	1 1/3
90	.109	12	.105	12	17	58	12	142	87	188	1 1/4
96	.109	12	.105	12	17	58	12	144	87	197	1 1/8



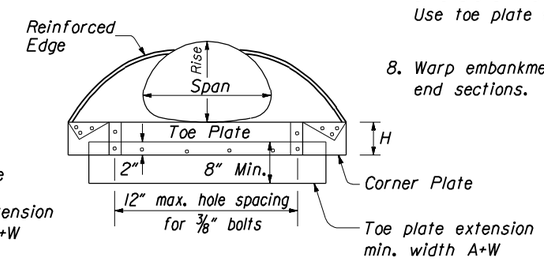
PLAN
(ROUND OR PIPE ARCH)



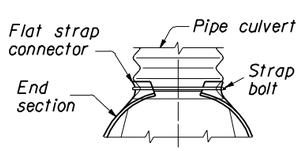
SECTION A-A



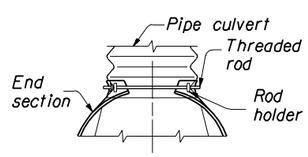
ELEVATION
(ROUND)



ELEVATION
(PIPE ARCH)

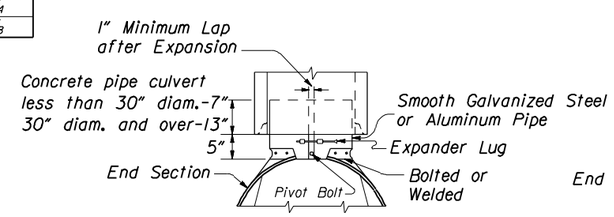


For 12" thru 24" round pipe and
17"x 13" thru 28"x 20" pipe arch

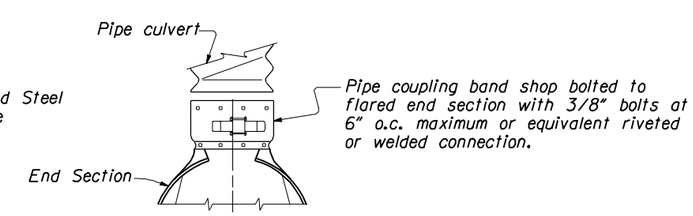


For 30" thru 60" round pipe and
35"x24" thru 66"x51" pipe arch

DESIGN A
CONNECTION TO ANNULAR CORRUGATED METAL PIPE



DESIGN B
CONNECTION TO CONCRETE PIPE
INLET END



For all sizes of round pipe and pipe arch.

DESIGN C
CONNECTION TO METAL PIPE
OR OUTLET END OF CONCRETE PIPE

NOTES:

1. Variations in design and dimensions are permitted to allow for manufacturer's standards.
2. Fabricate the diameter of the end section of Design B to match the inside diameter of the concrete pipe culvert.
3. Design C may be used in lieu of Design A for all metal pipe culvert sizes. Coupling bands may be any acceptable type for the pipe culvert specified.
4. Fabricate multiple piece bodies with lap seams tightly joined by 3/8" rivets or bolts. Fabricate end section center panels for 60" and larger diameter pipe and 71" x 47" and larger pipe arch from 0.138" (10 gage) steel or 0.135" (10 gage) aluminum.
5. On end section center panels for 77" x 52", 73" x 55" and larger pipe arch, provide 2 1/2" x 2 1/2" x 1/4" angle reinforcement bolted or riveted under the center panel seam.
6. Supplement the reinforced edges of end sections for 60" and larger diameter pipe and 77" x 52", 73" x 55" and larger pipe arch with 2" x 2" x 1/4" stiffener angles attached with bolts or rivets.
7. Fabricate connector section, corner plate and toe plate extensions from the same metal thickness as the panel body. Use toe plate extension where shown on the plans.
8. Warp embankment slopes to match the slope of the flared end sections.

NO SCALE

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
FEDERAL LANDS HIGHWAY

STANDARD

METAL END SECTION

STANDARD APPROVED FOR USE --/----

REVISED:

STANDARD
602-4

02/26/2003 11:50:41 AM M:\Standard\English\sf602x04.dgn